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ABSTRACT

Designed to help students develop efficient and effective study skills, the first of five sections in this booklet discusses the student role, including the overall purpose of a course of study, the student's obligations and responsibilities, ways in which a student is expected to develop, and the importance of organization. The second section looks at the actual learning process, explaining how learning occurs and how to achieve effective learning. The various resources available to students are reviewed in the third section: (1) teaching staff; (2) teaching support staff (library staff, computer specialists, technicians); (3) student services staff; (4) fellow students; (5) private learning resources (lecture notes, textbooks); (6) libraries and the materials they contain; (7) laboratories, studios, self-study centers, and other specialized facilities; and (8) computer facilities and associated software. Ways in which students can profit from these resources are also suggested. Focusing on course assignments, the fourth section shows how to prepare projects, reports, and essays in a systematic and professional manner. The final section shows how to prepare effectively for examinations and describes some test taking techniques. Four references on study methods and three on writing are recommended for further reading. (MES)

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Some Hints On How To Study Effectively

Introduction

This booklet has been written in order to help you to make the most of your time at college by developing efficient and effective *study skills*.

When you were at school, you probably received detailed guidance on *what* to study, *when* to study and *how* to study, so that all you had to do to pass exams was to follow the programme of work laid down by your teachers. Now that you have moved on from school to higher education, you will find that things have changed in a number of ways. First, the material that you will be covering is almost certainly much more difficult and demanding than that which you had to study at school. Second, the material will almost certainly be covered at a much faster rate. Third, *you yourself* will be largely responsible for planning and organising your work and making sure that you are properly prepared for the various examinations by which your progress will be assessed. Many people find the transition from the spoon-feeding and externally-imposed discipline of school to the self-reliance and 'laissez-faire' atmosphere of higher education difficult. If you are to do well in your chosen course, however, you will *have* to make this transition successfully. This will mean developing new attitudes, new work practices and new study techniques - changing, in other words, from a *pupil* to a *student*. This booklet has been produced in order to help you make this change as painlessly as possible.

The main text of the booklet is divided into five sections, each of which deals with a different aspect of study. The first examines your new role as a student, discussing the overall purpose of your course, pointing out what will be expected of you, and showing how it is perfectly possible to cope with all the work provided that you make sensible use of your time. The second looks at the actual learning process, explaining how learning occurs and suggesting ways in which you can make sure that it takes place effectively. The third reviews all the various resources that will be at your disposal during your studies - teaching staff, libraries, laboratory facilities, computers, and so on - and offers detailed advice on how to make effective use of them. The fourth deals with the highly important topic of course assignments, showing how to tackle projects, writing reports and writing essays in a systematic and professional manner. The fifth and final section looks at the thorny subject of examinations, showing how to prepare for them and offering a number of useful hints on examination technique. The booklet also lists a number of

books in which further information about the various topics covered can be found.

Your new role as a student

Let us begin this review of the basic principles of effective study by taking a general look at the new role in which you now find yourself – that of a *student*. In doing so, we will try to answer four fundamental questions:

(1) What is the basic purpose of the course that you are undertaking?

(2) What obligations and responsibilities will you have during the course?

(3) In what specific ways will you be expected to develop?

(4) How will you be able to cope with all the work required?

Let us now look at these in turn.

The basic purpose of your course

The first thing that you should appreciate about your course almost certainly is that it is *vocational* in nature. In other words, it is designed to *prepare you for employment* rather than simply give you a mind-broadening education of the type that you might receive in (say) a liberal arts course at a university. Some of the courses run at your college may be rather more vocationally-oriented and specialised than others, but they will all be designed to produce people with the sort of skills and knowledge that modern industrial society is looking for. Indeed, it is possible to represent all college courses as 'black boxes' of the type shown in the following schematic diagram, which illustrates the 'systems approach' that underlies much of modern educational thinking.

INPUT
People with the potential to play a certain role in society once they have acquired the necessary skills and knowledge
Course designed to supply all or part of the necessary education and training
OUTPUT
Qualified people capable of playing that role in society or progressing to more advanced study or training on the road to attaining their ultimate goal

Your course as a 'black box'

Your obligations and responsibilities

When you enrol for a higher education course, you are effectively entering into a 'contract' with the institution that is running the course and any body that is providing you with financial support. On its part, the institution is undertaking to provide you with the specialised facilities that you will need to carry out the work of the course, and, through its staff, to give you appropriate instruction, support, help and guidance. You, on the other hand, are undertaking to carry out the work of the course in a responsible and purposeful manner, and to do your best to meet the criteria by which it will be decided whether you have done so satisfactorily. Thus, it is up to *you* to make sure that you do so – by, for example, attending classes regularly, carrying out all the course work and assignments that you are given, and preparing yourself properly for exams. If you do not, then you will in effect be breaking your 'contract', and may well be asked to leave the course as a result – something that *no-one* wants to happen.

The different ways in which you will be expected to develop

While you are at college, you will be expected to develop in a number of ways. You will, first of all, be expected to acquire a thorough knowledge and understanding of the subject matter covered in your chosen course, and will also be expected to acquire a wide range of skills relating to the application and manipulation of this material. Educationists describe this aspect of a course as *cognitive development*, and classify the various processes that are associated with such development into six groups or levels, containing processes of supposedly increasing complexity and sophistication. These six levels, which together make up what they call the *cognitive domain*, are listed in the table below.

The six levels of the cognitive domain

Level 1	**knowledge** (knowing facts, stating definitions, recognising phenomena, *etc*)
Level 2	**comprehension** (demonstrating understanding of phenomena, principles, classifications, *etc*)
Level 3	**application** (applying general principles, procedures, *etc* in specific situations)
Level 4	**analysis** (breaking down systems into their constituent parts)
Level 5	**synthesis** (combining elements or components into new structured wholes)
Level 6	**evaluation** (making judgements about the extent to which material satisfies given criteria)

The cognitive development that you will be expected to undergo during your course will entail working at all six of these levels, and, as you progress through your course, you will almost certainly find that more and more of your time is spent working at the higher levels. Indeed, you will probably find it interesting to try to identify the level (or levels) of cognitive activity that each component of your course involves. This will not only give you considerable insight into the thinking behind the design of your course, but should also be of help in deciding how best to tackle the work.

You will also be expected to develop in a number of other ways during your time at college, since cognitive development is only one aspect of the educational process (albeit an extremely important one). You will, for example, be expected to undergo what educationists call *affective development* – acquiring things like self-discipline, perseverance, and a set of attitudes and values appropriate to your future role in society. You will also be expected to develop a whole series of *non-cognitive skills* – things like library skills, organisational skills, study skills, communication skills, interpersonal skills and psychomotor skills* (*manipulative and other skills that involve the co-ordination of mind and body – e.g. using a scientific instrument or drawing a picture). The exact nature of these other skills will vary considerably from course to course, as will their relative importance.

The importance of organising your work in a systematic way

One of the things that most new students find difficult is coping with all the various tasks with which they are suddenly confronted. How on earth, they ask, is it possible for me to write up notes and lab reports, complete assignments, carry out recommended reading, *and* study for exams when I am expected to attend classes for up to 25 hours a week?

Learning to cope with this workload is, of course, one of the skills that you are expected to acquire during your time at college. The secret lies in proper *organisation* of your work, something that is just as important for a student as it is for any other person whose success or livelihood depends on making efficient and effective use of his or her time. Some suggestions as to how you should approach this organisation of your work are given below.

- Identify the various tasks that you have to carry out during the day, the week, the term, and so on and establish *deadlines* and *priorities* for completing them. Producing a chart that sets these out clearly is often a good idea.

- Establish sensible and realistic schedules for your *day*, your *week*, your *term* and (if appropriate) your *year*. In doing so, try to make optimum use of *all* the time available to you – by, for example, using free time between classes to carry out routine work such as writing up notes and lab reports (you will be amazed just how much time this saves you later) and using vacation periods to carry out background reading and long-term assignments.
- Make *effective* use of the time that you set aside for work. Always start on time, for example, and do not fritter away your time by simply going through the motions of work or doing things (like mechanically copying out notes) that do not really help you to *learn* the material.
- Divide your study time sensibly between subjects, making sure that you allocate an appropriate amount of time to each – *especially* the ones that you find difficult.
- Allow time for systematic revision of work covered earlier in the week, term or year. As we will see in the next section, such revision is an extremely important part of the learning process, and it is essential that you build it into your work schedule.

How to be an effective learner

If you are to make a success of your studies, you really need to know something about the basic process that takes place during study – *learning*. In particular, you need to know what learning involves, and how you can take steps to make sure that it takes place effectively when you are studying. Let us therefore look at each of these topics in turn.

What learning involves

To put it at its most general, *learning* can be defined as a process whereby a person acquires the ability to carry out a task or procedure of some sort in a natural and relatively effortless way, as if it were an innate part of his or her behaviour pattern. The way in which such learning comes about will, of course, depend to a considerable extent on the exact nature of the task or procedure that is being learned. In the case of a relatively simple cognitive task such as learning the names of the various parts of an object or system, for example, it may simply involve scanning the material sufficiently often for it to pass through the *short-term memory* (where material is stored on a purely temporary basis) into the *long-term memory* (where material is stored on a long-term or permanent basis). In the case of a more complicated learning task involving higher-level

cognitive activities or a mixture of cognitive and non-cognitive activities on the other hand, it will probably involve actually carrying out the task sufficiently often for the behaviour patterns needed to perform it without difficulty to become firmly established. In both cases, however, the key to effective learning is what psychologists call *reinforcement* – repetition of the stimulus or activity that causes the learning to take place sufficiently often for the desired behaviour pattern to become firmly established in the mind or mind/body system of the learner.

Another feature of the learning process is that learned material or behaviour tends to disappear with time if the material or behaviour is not reinforced periodically. The ability to recall simple factual material, for example, generally falls to something like 25% of its original value roughly a week after the material was learned, and continues to fall thereafter until it eventually disappears completely unless the material is subsequently reinforced. If on the other hand the material is reviewed at suitable intervals, (say, after a day, a week, a month, and so on) it will become progressively more firmly lodged in the long-term memory until it eventually becomes a permanent fixture therein. Exactly the same is true of other learned skills, most of which require to be practised or used regularly if they are to become a permanent part of a learner's repertoire.

How to achieve effective learning

Now that we have seen what learning involves, let us look at five basic steps that you can take to help achieve effective learning.

(1) **Study in a suitable environment**

Unless you are one of those fortunate people who can shut themselves off from their surroundings and work under virtually any conditions, you will probably find that you can only study really effectively if the environment is suitable. Exactly what constitutes a 'suitable environment' will, of course, vary considerably from person to person. Some find that they work best in a library or communal study room, along with other learners. Others find such places too distracting and work best in the privacy of their own study or bedroom. As a general rule, however, you should try to work in a place that is quiet and relatively free from distractions, and where you find (through experience) that the overall atmosphere is generally conducive to study.

(2) **Only study when you are in a suitable mental state to do so effectively**

It is a well-established fact that learning takes place most effectively when the learner is in a suitable mental state, *i.e.* is men-

tally 'fresh', suitably motivated, free from worry or over-excitement, and free from the influence of alcohol or other mind-altering drugs. Thus, you should always try to be in such a state (in so far as circumstances allow) when embarking on a session of serious study. There is, for example, little point in trying to study if you have had a particularly demanding day and are mentally exhausted, or if you have just returned from a lengthy drinking session with your mates. Similarly, there is little point in continuing to study once you reach a stage where you are mentally saturated, or can no longer concentrate properly. If you *do* feel that you are approaching such a state, stop for a while and take a 'mental breather'; you will generally find that this re-charges your mental batteries. Indeed, most people find that they study most effectively if they build regular breaks into their study sessions – working intensively for 45 to 50 minutes (say) and then having a 10 or 15 minute break before starting again.

(3) **Try to establish clear objectives for each study session**

There is little point in setting out on a journey if you do not know where you want to go. Similarly, there is little point in studying material if you do not know what it is that you are trying to achieve through such study. Thus, you should always try to establish clear *objectives* for any study session, both in terms of the amount of material that you want to cover and in terms of the specific learning outcomes that you want to bring about. The latter should, incidentally, always include *understanding* the material being studied, since there is little point in being able to reel off facts, principles, proofs, *etc.* parrot-fashion if you do not understand them properly. Also, thorough understanding of materials is an essential pre-requisite to being able to use the material properly, *e.g.* applying a theory or principle in specific situations or carrying out high-level cognitive activities (such as analysis, synthesis and evaluation) based on the material.

(4) **Try to use the most effective study methods**

You should also give some thought to the *methods of study* that you employ. Different study methods are suitable for achieving different types of educational objectives, so you should always try to use methods that are likely to help you achieve what it is you want to achieve. If you want to become proficient in solving problems of a particular type, for example, it is never sufficient simply to read up the relevant theory and study solved examples of such problems; you will also have to practice solving such problems yourself. Also, try to choose study methods that work effectively with *you*. Different people learn most effectively in different ways. Some, for example, are what educational psy-

chologists call *serialists*, and learn a complex set of material most effectively by breaking it down into a series of sub-sets or stages, mastering each of these separately, and finally combining the sub-sets to build up the whole set or system. Others are what are called *holists*, and work best by learning the material as an integrated whole right from the start. People also differ in the extent to which different *media* help them to learn effectively, so you should again try to find the ones that are most helpful to you. You may, for example, find that listening to an audiotape or studying a video or tape-slide programme is more effective in helping you to master material than simply reading about it in a book; if so, use these media whenever they are available.

(5) **Remember the importance of periodic reinforcement**

As we saw earlier, it is not possible simply to learn a given set of material once and then expect to be able to remember it indefinitely. To do this, it is necessary to *reinforce* the learning over an extended period of time, so that it becomes firmly lodged in the long-term memory. Thus, you should make the review of previously-learned material a regular part of your study process, scheduling these review sessions in such a way that the material is (hopefully!) mastered by the time you have to sit any important examination involving it.

How to use the resources available to you

Now that we have seen what learning involves, let us take a look at the various *resources* that will be available to you during your course in order to help you achieve such learning. These can be divided into two broad groups – *human resources* and *non-human resources* – which we will again look at in turn.

Human resources

The various 'human resources' that will be available to you during your time at college can themselves be divided into a number of distinct groups:

- teaching staff (lecturers, tutors, counsellors, *etc.*);
- teaching support staff (library staff, computer specialists, technicians, *etc.*);
- student services staff;
- your fellow students.

Let us now see how each of them can help you in your study.

Teaching staff

Although there will be times when you may not think so, all the teaching staff with whom you will come in contact during your course are there for *your benefit*. Indeed, you should try to get into the habit of thinking of them as *resources that can be used to help you to learn*. Three of the most important ways in which you can do this are suggested below.

(1) *Try to get the most out of lectures*. In most courses, lectures are the main vehicle whereby direct teaching takes place, so it is obviously essential that you make the most effective use of them. You should, first of all, always make a supreme effort to follow what the lecturer is saying and try to understand the material being covered. If you do *not* understand any really important point, argument, *etc.*, ask for it to be explained more clearly if you get the chance to do so (most good lecturers regularly ask their classes if they have understood important material, and *expect to be told* if they have not). If you are not able to have the matter explained during the actual lecture, make sure that you do so later, *e.g.* by asking a question at the end of the lecture or at a tutorial, or by approaching the lecturer in private (again, most lecturers welcome such approaches).

Second, you should always try to ensure that you come out of each lecture you attend with a full set of notes on the material covered – or, at the very least, with skeleton notes that are sufficiently comprehensive to enable you to produce a full set of notes later. Some lecturers will, of course, provide you with ready-made notes in the form of handouts, while others will make note-taking easy by writing all the really important material on the chalkboard or OHP, or by displaying pre-prepared OHP transparencies showing the key points. Others will not be so helpful, however, and it is with these that you will really have to work hard if you are to come away with decent notes. The secret here is to be *selective* in what you take down, trying to identify the *key points* being made by following the lecturer's train of thought and line of argument and making sure that you get all of these down on paper. Do not worry about missing out details; if necessary, leave spaces in your notes and fill these in later.

(2) *Make intelligent use of tutorials, seminars, etc.* Such sessions are intended to serve as a back-up to lectures, and are provided for *your* benefit. Thus, you should use them to have difficulties cleared up, ask supplementary questions, explore areas in which you are particularly interested, and so on. Never sit

silently at such sessions waiting for the tutor or organiser to make all the running. Also, never be afraid to speak if you have a point to make or a question to ask; if you do not speak at such times, you are simply wasting a valuable opportunity to learn.

(3) *Make full use of teaching staff during laboratory work, studio work, etc.* When you are working in a laboratory, studio or similar situation, remember that the teaching staff who are present are there to *help* you, not merely to keep an eye on what you are doing. Thus, you should never hesitate to ask them for help or advice if you feel that this would be of assistance to you. Not to do so is to waste one of the major resources at your disposal.

Teaching support staff

Like the mainline teaching staff, the various members of the teaching support staff (Library staff, staff of your college's Computer Unit, technicians, secretarial staff, and so on) are basically there to help you and your fellow students to learn. Some of them, it is true, only provide students with *indirect* support, by providing direct support to teaching staff. Some also provide services that are *directly available to students*, however (*e.g.* most Library staff, and the staff in the Computer Unit), so you should never hesitate to avail yourself of these services if they can be of use to you (see the sections on 'Libraries' and 'Computer facilities' below for further information about these services).

Student Services staff

The various staff in your college's Student Services section are also directly available to students. You should again never hesitate to contact them if you feel that they can help you in any way – particularly concerning any problems that you may have with regard to accommodation, grants, personal matters or career choice. The Student Services staff have considerable experience in all these areas, and will be only too pleased to help you cope with such problems, which can greatly reduce the efficiency with which you carry out your work if you let them get on top of you.

Your fellow students

Finally, you should never forget your fellow students, who are just as valuable human resources as any of the other groups mentioned above. Indeed, there are some situations when they can be the most valuable human resource of all, since they are able to look at the work of the course from the same point of view as yourself. Thus, you should take every opportunity to discuss problems, exchange ideas, and generally talk about your work with your fellow students; such interaction can be of enormous help to everyone involved.

Non-human resources

The various 'non-human resources' that will be available to you during your course take a large number of forms, and include:

- Your own private learning resources (lecture notes, textbooks, *etc.*);
- Libraries and the various materials that they contain;
- Laboratories, studios, self-study centres and other specialised facilities;
- Computer facilities and their associated software.

Let us again see how each of these can help you in your studies.

Your own private learning resources

These will almost certainly prove to be the most important non-human resources at your disposal, since a large part of your private study will be centred on them. Thus, you should try to use them in an effective way.

With lecture notes, for example, you should always make sure that they are properly written up after each day's work, filling in any gaps that you had to leave during the actual lectures and adding any supplementary material that you feel would be useful. It is also a good idea to highlight any really important points (*e.g.* by underlining or boxing in with a coloured pen) and to classify the material covered according to its relative importance (*e.g.* 'must be known thoroughly', 'must be understood, but will not have to be reproduced', 'background material – no need to know details', *etc*). Systematic annotation of this type can be of great help during revision – particularly during preparation for exams.

With textbooks, the secret of effective use is the development of sound *reading skills*. These include the following:

- being *selective* in what you read, making sure that it is likely to be both *relevant* and *useful*;
- carrying out a preliminary scan of any material to be read in order to get an overview of it, identify important sections, and so on;
- varying the speed and intensity of your reading according to what you want to get out of the material, its difficulty, its importance, *etc*.

- making notes, summaries, *etc.* as you read (these not only help you to remember the material but are also extremely useful during subsequent revision);
- reading any really important sections several times in order to master the content (remember the importance of *reinforcement* in learning!).

Libraries

Libraries are invaluable learning resources for two reasons. First, they provide you with access to a whole range of materials that would not otherwise be available to you. These include textbooks to supplement the ones that you have to buy yourself, reference books, journals, audiovisual materials of many types (audiotapes, tape-slide programmes, videos, *etc.*) and a selection of both popular and quality newspapers. Any materials which you require that are not directly available through your college library can often be borrowed for you through the inter-library loan service. Second, libraries constitute an ideal environment in which you can work – both for short periods (*e.g.* during free time between classes) and for longer periods (*e.g.* during evenings, or at weekends).

Thus, you should get into the habit of making full and regular use of the various library facilities that are at your disposal. Most college library staff organise introductory tours to make new students aware of these facilities and help them to find any resources that they may require in the course of their studies. Many also provide more advanced instruction in 'library skills' as part of specific courses. They are, of course, also available to students to answer questions – both about the library facilities in general and about their own specialist areas. Thus, you should again never hesitate to ask for help if you require it. Most college libraries also provide library guides which give detailed information about their various facilities and services, and it is strongly recommended that you make yourself familiar with these.

Laboratories, studios, self-study centres, etc.

The various specialised laboratories, studios, *etc.* that have been set up in your college to provide facilities for practical work should also be thought of as learning resources that are available to help you in your studies rather than simply as places where you attend classes. In many cases, their facilities can be made available outwith normal class time by arrangement with the staff responsible for running them. Thus, you should again make full use of them if they can be of help to you in your work (*e.g.* in carrying out projects or assignments). A number of departments may also provide specialised fa-

cilities in which students can study individualised learning materials. Thus, you should again make a point of finding out what facilities are available and making full use of any that are likely to be of help in your studies.

Computer facilities

Computers now play an important role in many courses, and an increasingly wide range of computer facilities are becoming available to students. Distributed throughout most colleges are terminals linked to college's time-sharing mainframe computer operated by the college's Computer Unit, and many departments also provide further 'local' facilities for use by their students (minicomputers, networks of microcomputers, individual microcomputers, and so on). These various facilities can be of enormous help to students, both in their coursework and in their private studies (for working with computer-based learning packages, for example). Thus, you should again take full advantage of them whenever they can be of use to you.

How to tackle assignments

During your time at college, you will undoubtedly have to complete a fair number of *assignments* – major pieces of work that you have to carry out either individually or as part of a team. The nature of these assignments will obviously depend to a considerable extent on the type of course that you are pursuing and the individual subjects that it contains, but will probably involve carrying out *projects* of one form or another, writing *reports* of various types and writing *essays*. In this section we will therefore take a detailed look at such assignmnents, starting by explaining why they are regarded as such an important part of the work of your course and then offering guidance on how to tackle projects, write reports and write essays.

The purpose of assignments

Earlier in this booklet, we discussed the various ways in which you will be expected to develop during your time at college, and highlighted the importance that is attached to helping students to develop *higher cognitive skills* and all the various *non-cognitive skills* that are associated with higher education. Such skills cannot all be developed simply by attending lectures and other routine classes and by learning up material for exams, however. In many cases, the only way in which they can be acquired is by tackling fairly complicated tasks of the type that are set in assignments – hence the main reason for including such assignments in courses of all types. The other reason is that such assignments help the people responsible

for running courses to assess the progress that students are making. Indeed, major assignments carried out in the later years may well play a significant part in determining your ultimate success in your course (whether you pass or fail, whether you qualify for commendation, the class of honours degree you receive, and so on). Thus assignments are *important*, and should never be treated lightly.

How to tackle projects

Whenever you are given a project of some type to carry out, whether individually or as part of a co-operative team, you will greatly increase your chances of success if you adopt a professional, systematic approach of the type suggested below.

Stage 1: identify and define your task. This is absolutely fundamental, but it is surprising just how often students rush straight into projects without really being clear what it is they are expected to do. Thus, before you start work on *any* project, you should make sure that you know the *exact nature* of the task that you have been set, the nature of the 'ground rules' within which you will be expected to work, the deadline for completion of the project, and so forth. If you are not sure about any of these matters, *ask*.

Stage 2: decide how to tackle the project. Never start work on a project before giving considerable thought to just how you are going to tackle it. First, examine the various alternative approaches, carrying out any preliminary research necessary and seeking any advice or guidance that you feel that you require. Then, decide which approach would be most suitable, or would give you the greatest chance of success. Finally, draw up detailed plans for putting your chosen approach into practice, identifying the various stages or sub-tasks, producing a realistic schedule for their completion, and so on.

Stage 3: carry out the work of the project. Put your plan into effect, only departing from it if it is absolutely necessary and making sure that you meet all important deadlines. In carrying out the work, make *full use* of all the various resources that are at your disposal.

Stage 4: report on the outcome in whatever way is required. Depending on the nature and purpose of the project, this may involve writing a report, giving a 'live presentation' of some sort, or producing and displaying actual materials – or some combination of these. Whatever the nature of the 'end product' that you are required to produce, however, make sure that it is of the highest possible quality, and that it does full justice to the work that has been

carried out. It will, after all, be on the quality of the end product that your work is largely judged.

How to write reports

When you have to write a report, you should again be sure that you know exactly what you are expected to do (the material to be covered, the format, the length, the deadline for completion, and so on). If you are not clear about any of these matters, you should *ask*. A full report would normally be expected to contain the following sections, however.

- *The Title*. Ideally, this should state the problem being tackled or the question being asked and give some indication of the approach adopted. A good title should be short, specific, and should attract the interest of the reader. If necessary, supplement a main title with a subtitle rather than use a title of excessive length.
- *The 'Synopsis' or 'Abstract'*. This should give a precis of the content of the report. When read in conjunction with the title, it should give a clear picture of the main points covered, so that the reader can decide whether or not to read the full report. Normally, it should be no longer than 200 – 300 words.
- *The 'Introduction'*. This is the first section of the report proper, and should tell the reader *what* you did and *why* you did it. It should also tell the reader what form the report will take.
- *The 'Methods' section*. This should describe the approach that you adopted to the project and the methods that you employed in carrying out the work. It should also describe any facilities, equipment or materials used, with the aid of suitable diagrams, photographs, *etc*. where appropriate.
- *The 'Results' section*. This should describe your observations, findings, results, *etc*. using appropriate presentation methods (graphs, tables, computer print-outs, and so on). It should not normally discuss their significance at any length, however, this being best left to the 'Discussion' section.
- The 'Discussion' section. This should be the key section of your report, and should be used to interpret your results or findings, show their significance, and relate them to any previous work in the same area. The various points should be logically argued and developed, but not too discursive. The reader should be able to judge the validity of your conclusions from the information given in this section of the report.
- *The 'Conclusion'*. This should simply state the overall conclusions that can justifiably be drawn from your work, and indicate

their significance. If your results were inconclusive, do not be afraid to say so, but give reasons why this was the case, and suggest how matters could be improved in future work. *Do not* simply present a further summary of your results.

- *The 'References'*. Here, you should list the various reports, papers, books *etc.* that were actually cited in your report, *not* literature consulted. You should give sufficient information about each item to enable an interested reader to follow up the reference without difficulty, normally by giving the name of the author, the title of the item, the publication in which it appeared, and the date.
- *The 'Bibliography'*. In some cases, you may be asked to provide a Bibliography that lists material which you consulted during your work. This should be drawn up in the same way as the 'References' section.

How to write essays

When you are asked to write an essay, you should again begin by making sure that you know exactly what is expected of you (material to be covered, format, length, whether references are required, deadline for completion, and so on). The way in which you approach the essay will then depend to a large extent on whether the essay is a *structured essay* (in which you are told in fairly specific terms what the essay should cover and what the structure should be) or an *unstructured essay* (in which you are given considerable freedom with regard to these matters). Examples of essays of the two types might be:

> "Write an essay of between 1500 and 2000 words on the biological effects of ionising radiation, dealing first with the general effects of radiation on living tissue, then with the effects on human beings at 'whole body' and 'individual organ' level, and finally with the possible long-term genetic effects on the human race."

and

> "Should environmental conservation be regarded as a luxury or a necessity? Discuss in roughly 1500 words."

Clearly, the writer is being asked to do completely different things in these two essays, and is also being required to demonstrate different types of skills. You might like to try to decide what these are! There are, however, a number of basic features that *all* essays should have.

These are:

- *An 'Introduction'*, which should identify the subject of the essay and state how you intend to deal with it.
- *The 'main body' of the essay*, which should deal with the subject in a clear, thorough and systematic way, supporting or substantiating points by giving appropriate references if these are asked for.
- *A 'Conclusion'*, which summarises and/or draws together the main points covered.

The essay should also include a *'References'* section and/or a *'Bibliography'* similar to those in a report if these are asked for.

How to tackle examinations

The feature of their courses that the majority of students probably dislike most is having to sit examinations. We will therefore end this study guide by giving some advice on how to tackle examinations, beginning by explaining why they are necessary, then offering some hints on how to prepare for exams and on basic examination technique.

The purpose of examinations

Contrary to what many students think, the people responsible for running courses do not make students sit examinations because they like setting exams, or because they enjoy seeing students suffer. Most lecturers probably dislike exams almost as much as their students, because they involve a great deal of hard work on their part – both in the preparation and in the marking. There are, however, two very good reasons why they continue to be used. First, no-one has so far managed to think of a satisfactory alternative method of assessing student achievement. Second, examinations provide students with one of their main motivations for working hard during their courses and hence achieving the course objectives. Thus, despite their many faults, examinations are still an indispensible part of the educational system, and are likely to remain so for many years to come. It is therefore up to you to try to make the best of exams, since success in your course will be largely dependent on how well you perform in them. Some hints on how to do so are given below.

How to prepare for examinations

Apart from intrinsic ability (which it is assumed that you have, otherwise you would not have been accepted for your course), you

need two things in order to do well in examinations. The first is to be *properly prepared*, so we will now take a look at some of the ways in which you can try to make sure that this is always the case.

- At the start of each term, or session, find out what your examination commitments will be – *when* they will take place, *what*, will be examined, *what form* the examinations will take, and so on. Find out as much as you can about these exams, so that you know exactly what you will have to do in order to be properly prepared for them. For each subject being examined, study the syllabus and (if available) the list of educational objectives; this will give you a good idea of what you will be expected to cover. Also, study past papers from the same exams, which can generally be found in your college Library; this will give you an even clearer idea of what will be expected of you.
- Establish a systematic and sensible schedule for preparing for your exams, combining study of new course material and revision of earlier material in such a way that you will have covered all the required material thoroughly by the time the exams come along. As you carry out this work, classify the material that you are studying into three categories: (1) key material that you must know thoroughly; (2) less important material with which you should be fairly familiar, but need not know quite so thoroughly; (3) peripheral or background material of which you need only have a relatively superficial knowledge or which does not need to be known for examination purposes. Use this classification to determine the priority that you give to different material during your studies and during your final preparation for your exams. In particular, make sure that you know *all* the material in category 1 and as much of the material in category 2 as possible. Do not spend too much of your valuable time studying material in category 3, especially as the examinations draw close; you can always look at it again during the holidays if you feel that it would be in your long-term interest to do so or if you are particularly interested in any topic.
- Do not exhaust yourself by too much last-minute swotting. If possible, take a complete break from study the evening before an exam; this will help to ensure that your mind is suitably fresh when you actually sit the exam. *Never* sit up half the night trying to cram in material that you should have covered earlier; if you do this, you will almost certainly be in no fit state to do yourself justice next day. Also, it is strongly advisable not to be suffering from a hangover when you sit an exam!
- On the day of an exam, make sure that you arrive at the examination room in good time (at least ten minutes before the exam

is due to start). Also, make sure that you have everything that you will need for the exam – writing materials, ruler, pocket calculator, and so on. It is, incidentally, always a good idea to have a spare pen available – or a bottle of ink or spare cartridge if you use a fountain pen.

Some hints on examination technique

The second thing that you need in order to do well in exams is a *sound examination technique.* Let us therefore see what this involves.

- Before the start of an exam, listen *attentively* to any spoken instructions that you are given, and, when you are given the paper, read any instructions that it contains *slowly* and *carefully*, so that you are quite clear what you have to do. If you are in any doubt about any matter, *ask*.
- Before you start to answer the paper, decide on a sensible schedule that will enable you to complete all the sections or questions *and* leave 10 – 15 minutes at the end for checking your answers. Then, *stick to this schedule rigidly*, stopping work on any question for which you have run out of time. Unless you do this, you are liable to find that you do not have time to answer the required number of questions or to do justice to the later questions.
- If the paper is of the 'extended answer' variety, and allows you a choice of questions, *spend at least 5 minutes reading the entire paper*. As you do so, give each question a rating that reflects the confidence with which you feel you would be able to tackle it, e.g. 'a' for 'should be able to answer really well', 'b' for 'might be able to answer fairly well' and 'c' for 'would not be able to answer well'. Then, answer the best of the 'a' questions first (this should get you off to a good start) followed by the next best 'a' question, and so on until you have run out of 'a' questions. Then start on the 'b' questions (if you have to) and repeat the process. Only attemp 'c' questions if you run out of 'a's' and 'b's' – which you should not do if you are properly prepared for the exam.
- If the paper is of the 'multiple-choice' or 'short-answer' variety, with a large number of items and no choice, do not waste time reading through the paper. Simply start at question 1 and work systematically through the paper, moving on to the next question if you cannot answer it in a reasonable time (*never* get bogged down struggling with individual multiple-choice or short-answer items). Once you have worked your way through the entire paper, start at the beginning again and see if you can

answer any uncompleted items second time round – in many cases, you will find that you can.

- Make sure you *understand* each question before you attempt to answer it. Then, make sure that you *answer the question that has been set*, not some other question that you would *like* to have been set! Also, do not waste time supplying material that has not been asked for; this will not gain you any extra marks.
- Finally, *DON'T PANIC* – advice that is just as valuable when sitting an exam as when hitch-hiking round the Galaxy!

Further reading

A large number of books on study methods have been written for students. Four of the most useful are listed below. Others will be available in your college Library.

1. *Brain Train – Studying for Success*, by R Palmer and C Pope; E & F N Spon, London; 1984.
2. *A Guide to Learning Independently*, by L A Marshall and F Rowland; Open University Press, Milton Keynes; 1983.
3. *Successful Study: A Handbook for Students*, by J Burnett; Teach Yourself Books, Hodder and Stoughton, London; 1979.
4. *How to Study*, by H Maddox; Pan Books, London; 1967.

The following three books on writing are also highly recommended.

5. *Writing English: A Workbook for Students*, by D J Collinson; Pan Books, London; 1982.
6. *Effective Writing*, by C Turk and J Kirkman; E & F N Spon, London; 1982.
7. *How to Write Essays*, by R Lewis; Macmillan, London; 1979.